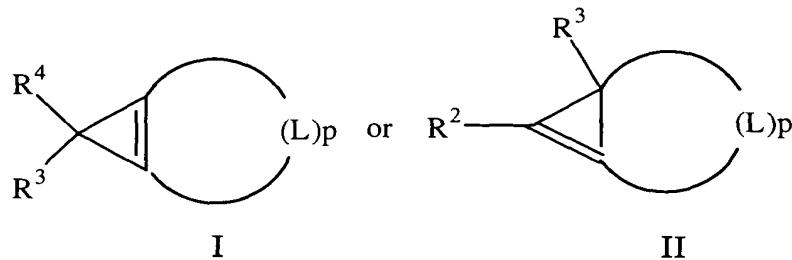


We claim:

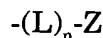
1. A method of inhibiting an ethylene response in a plant comprising the step of contacting the plant with an effective ethylene response-inhibiting amount of a cyclopropene derivative of formula I or II:



5

or a mixture thereof, wherein:

- a) each R^2 , R^3 , and R^4 is independently a group of the formula:



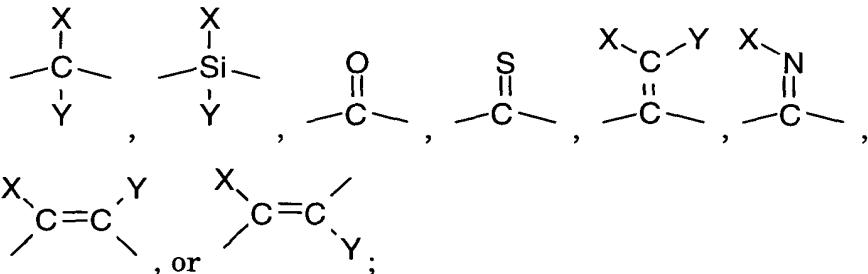
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wherein:

- i) n is an integer from 0 to 12 and p is an integer from 3 to 10;
 - ii) each L is independently selected from a member of group D, E, or J.

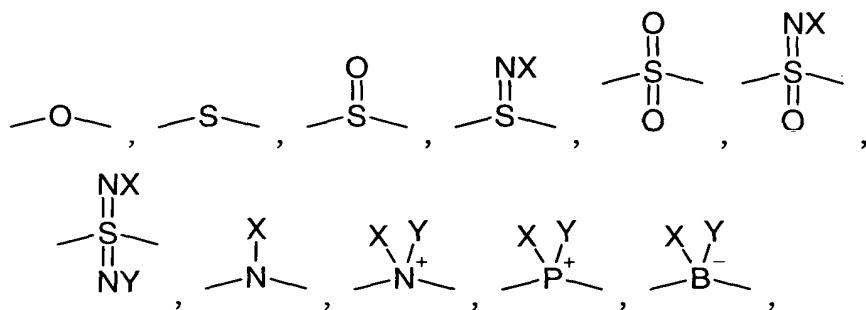
wherein:

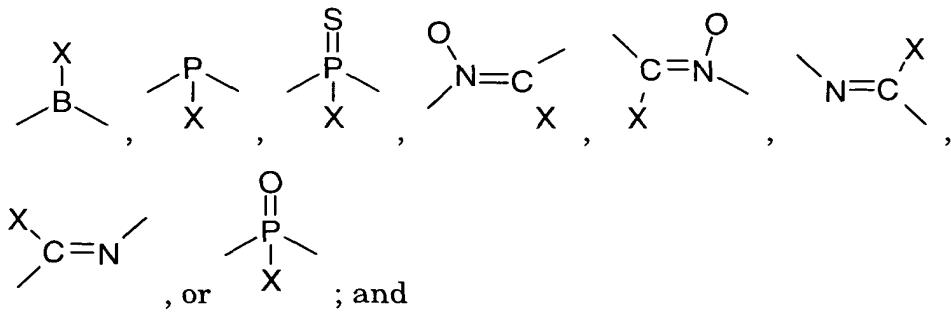
D is of the formula:



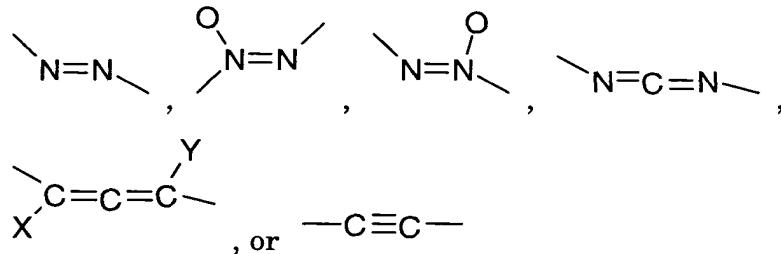
15

E is of the formula:



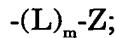


J is of the formula:



wherein:

A) each X and Y is independently a group of the formula:



and

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B) m is an integer from 0 to 8; and

C) no more than two E groups are adjacent to each other and no J groups are adjacent to each other;

iii) each Z is independently selected from:

A) hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, or

B) a group G, wherein G is an unsubstituted or substituted; unsaturated, partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or fused; carbocyclic or heterocyclic ring system wherein;

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- 1) when the ring system contains a 3 or 4 membered heterocyclic ring, the heterocyclic ring contains 1 heteroatom;
- 2) when the ring system contains a 5, or more membered heterocyclic ring or a polycyclic heterocyclic ring, the

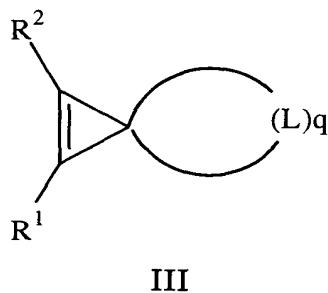
heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;

- 3) each heteroatom is independently selected from N, O, and S;
 - 4) the number of substituents is from 0 to 5 and each substituent is independently selected from X
- 5

- b) the total number of non-hydrogen atoms in each compound is 50 or less;

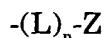
its enantiomers, stereoisomers, salts, and mixtures thereof; or a composition thereof.

- 10 2. A method of inhibiting an ethylene response in a plant, comprising contacting the plant with an effective ethylene response-inhibiting amount of a compound of formula III:



- 15 wherein:

- a) each R¹ and R² is independently a group of the formula:



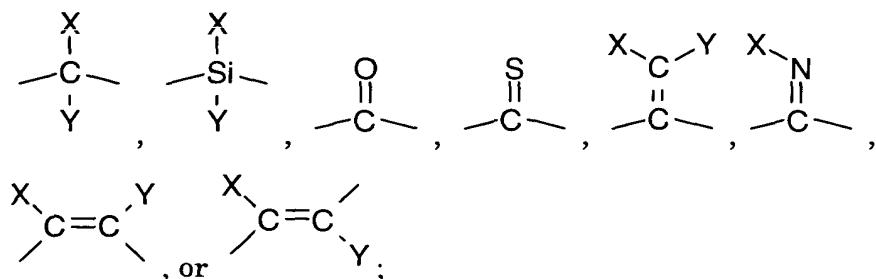
wherein:

- i) n is an integer from 0 to 12 and q is an integer from 2 to 11;

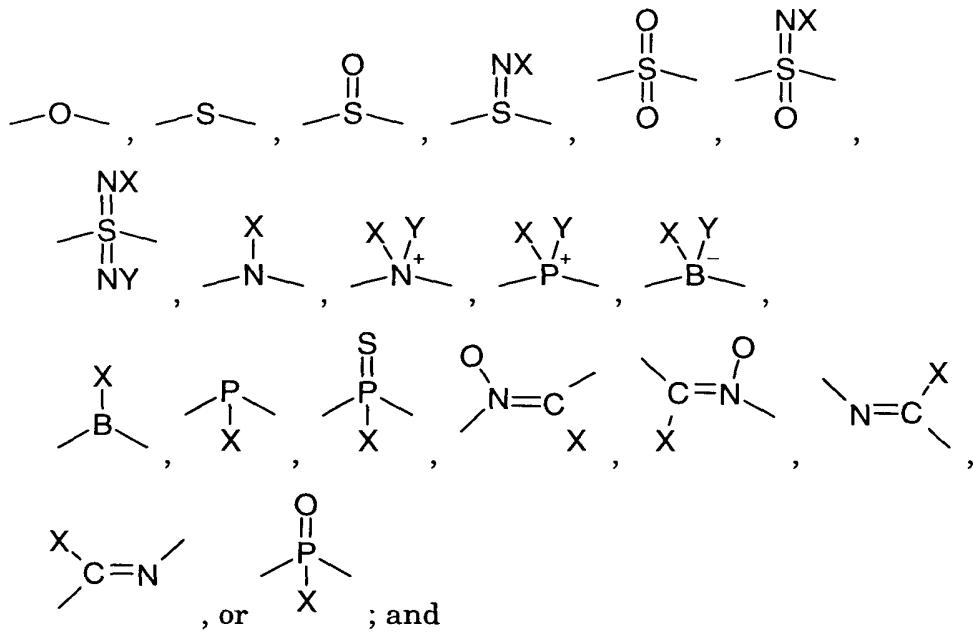
- 20 ii) each L is independently selected from a member of group D, E, or J

wherein:

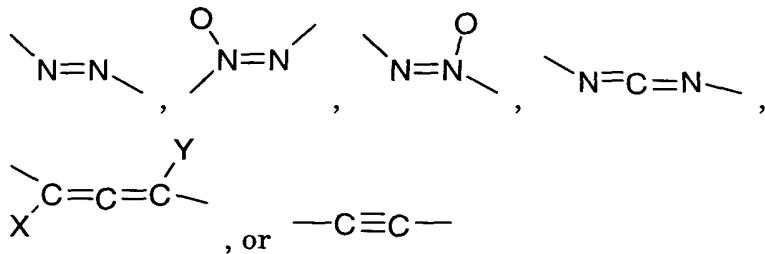
D is of the formula:



E is of the formula:



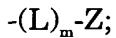
J is of the formula:



wherein:

10

A) each X and Y is independently a group of the formula:



and

B) m is an integer from 0 to 8; and

C) no more than two E groups are adjacent to each other and no J groups are adjacent to each other; and

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iii) each Z is independently selected from:

A) hydrogen, halo, cyano, nitro, nitroso, azido, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio, or

- B) a group G, wherein G is an unsubstituted or substituted; unsaturated, partially saturated, or saturated; monocyclic, bicyclic, tricyclic, or fused; carbocyclic or heterocyclic ring system wherein;
- 5 1) when the ring system contains a 3 or 4 membered heterocyclic ring, the heterocyclic ring contains 1 heteroatom;
- 10 2) when the ring system contains a 5, or more membered heterocyclic ring or a polycyclic heterocyclic ring, the heterocyclic or polycyclic heterocyclic ring contains from 1 to 4 heteroatoms;
- 15 3) each heteroatom is independently selected from N, O, and S;
- 4) the number of substituents is from 0 to 5 and each substituent is independently selected from X
- b) the total number of non-hydrogen atoms in each compound is 50 or less;
- 15 its enantiomers, stereoisomers, salts, and mixtures thereof; or a composition thereof.
3. The method of claim 1 or claim 2, wherein the ethylene response is one or more of ripening or senescence of flowers, fruits, and vegetables; abscission of foliage, flowers, and fruit; the shortening of life of ornamental plants, cut flowers, shrubbery, seeds, or dormant seedlings; inhibition of growth; stimulation of growth; auxin activity; inhibition of terminal growth; control of apical dominance; increase in branching; increase in tillering; changing the morphology of plants, modifying the susceptibility to plant pathogens such as fungi; changing bio-chemical compositions; inducing pest resistance; abortion or inhibition of flowering or seed development; lodging effects; stimulation of seed germination; breaking of dormancy; hormone effects; and epinasty effects.
- 25 4. The method of claim 1, wherein the compound is of formula I and one of R³ and R⁴ is hydrogen.

5. The method of claim 1, wherein the compound is of formula II and one of R² and R³ is hydrogen.
6. The method of claim 2, wherein one of R¹ and R² is hydrogen.
7. The method of claim 1 or claim 2, wherein n is from 0 to 8.
- 5 8. The method of claim 1 or claim 2, wherein m is from 0 to 4.
9. The method of claim 1, wherein p is from 4 to 7.
10. The method of claim 2, wherein q is from 4 to 6.
11. The method of claim 1 or claim 2, wherein:
 - a) each D is independently -CXY-, -SiXY-, -CO-, or -CS-;
 - b) each E is independently -O-, -S-, -NX-, or -SO₂-;
 - c) each X and Y is independently H, halo, OH, SH, -C(O)(C₁-C₄)alkyl -, -C(O)O(C₁-C₄)alkyl -, -O-(C₁-C₄)alkyl, -S-(C₁-C₄)alkyl, or substituted or unsubstituted (C₁-C₄)alkyl; and
 - d) each Z is independently H, halo, or G.
- 15 12. The method of claim 1 or claim 2, wherein R², R³, and R⁴, when present, are each independently selected from hydrogen and (C₁-C₄)alkyl.